UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/619,829 | 07/15/2003 | Jason A. Trachewsky | BP2481.3 | 7190 |

51472 7590 10/14/2010
GARLICK HARRISON & MARKISON
P.O. BOX 160727
AUSTIN, TX 78716-0727

| EXAMINER | |
|---|---|
| CAL WAYNE HUU | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2617 | |

| NOTIFICATION DATE | DELIVERY MODE |
|---|---|
| 10/14/2010 | ELECTRONIC |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

MMURDOCK@TEXASPATENTS.COM
SMCWHINNIE@TEXASPATENTS.COM
GHMDocketing@cpaglobal.com

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/619,829 | TRACHEWSKY, JASON A. | |
| | Examiner | Art Unit | |
| | WAYNE CAI | 2617 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 May 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *15-26 and 35-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15-26 and 35-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 08, 2009 has been entered.

### *Response to Arguments*

2. Applicant's arguments filed May 10, 2010 have been fully considered but they are not persuasive.

Regarding claim 15, the Applicant argues at page 9 that Malhotra only teaches scanning channels without reference to protocol. Thus, since Malhotra is not clear and does not clearly state that such scanning occurs across channels of different protocol radios that are part of one device, such operation cannot be assumed. The Examiner respectfully disagrees with this argument.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208

USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In this case, the Examiner relied on Monin for the teachings of scanning different protocols that are part of one device. More importantly, Monin clearly teaches or suggests that an access point can alternatively be driven to operate in accordance with different WLAN standards, which reads on the plurality of protocols. Moreover, Monin also illustrates in Figures 5-7 that the plurality of baseband modules, which reads on the plurality of frequency bands of claimed features, are resided in one single device.

It is noted that although Monin teaches or suggests using different protocols in one single device; Monin, however does not expressly teach or suggest that they are operate in different channels. Therefore, the Examiner would like to bring in Malhotra to clearly show to the Applicant that the step of selecting a particular channel according to a protocol is taught by Malhotra and/or known in the art.

Based on the foregoing discussion, it should be clear to the Applicant that the combination of Monin and Malhotra teaches or suggests all claimed features. Specifically, Monin and Malhotra teaches or suggests "scanning a plurality of channels in the first and second frequency bands transmitted according to the first and second communication protocols to select a channel for a subsequent communication."

Regarding claim 22, the Applicant argues at the first full paragraph of page 10 that even if Monin is combined with Agrawal and Malhotra, the references do not teach a single device that communicates with another single device over a selected one of a

plurality of radios and associated protocols based on a multi-protocol scans. The Examiner respectfully disagrees.

Monin clearly teaches at paragraph 0071 that the plurality of protocols is supported in one single device, and a protocol is selected for operation. Moreover, the plurality of baseband modules is resided in one single device.

Furthermore, Agrawal teaches a single baseband processor.

And, Malhotra, on the other hand, teaches the step of selecting a channel according to a protocol.

Hence, as discussed above, the combination of Monin, Agrawal and Malhotra teaches a WLAN device using multiple protocols to support communications, and further select a channel from different frequency band associated with the protocol for operation.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 15, 16, 18-21, and 35-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of Malhotra et al. (hereinafter "Malhotra", US 7,110,374).

**Regarding claim 15**, Monin teaches or suggests a Wireless Local Area Network (WLAN) device (fig. 5 and fig. 6, control unit 28). Note: the WLAN device can be either the handset or an access point as described in the Applicant's PG Pub specification paragraph 0034 and/or stated on page 9 of Remark, comprising:

a first baseband processor interface for receiving, processing and generating digital data (fig. 5 and/or fig. 6, baseband module 1. The baseband module 1 implicitly teaches a baseband processor interface because the baseband processor must be able to connect, interact or communicate with many other components. For example, in this case, the baseband module 1 is connected and communicated with radio module 1. Furthermore, paragraph 0005 also teaches or suggests that this invention is related to "digital data". Also, see paragraphs 0025-0027, 0017 and 0082);

a first radio for receiving the digital data and for transmitting RF signals in a first frequency band according to a first communication protocol and for receiving RF signals in the first frequency band and for producing corresponding digital data to the first baseband processor interface (fig. 5 and/or fig. 6, radio module 1 is connected to the baseband module 1);

a second baseband processor interface for receiving, processing and generating digital data (fig. 5 and fig. 6, baseband module 2 is connected to radio module 2.); and

a second radio for receiving the digital data and for transmitting RF signals in a second frequency band according to a second communication protocol and for receiving RF signals in the second frequency band and for producing corresponding digital data to the second baseband processor interface (fig. 5 and fig. 6, radio module 2 is

connected to baseband module 2. Also see paragraphs 0025-0027). The Examiner further notes that Monin specifically teaches or suggests the WLAN as described operating at 2.4 GHz frequency, but can also be implemented using other WLAN technologies including at different frequency bands, etc. (see paragraphs 0025-0027, 0071 and 0082). Hence, this teaching reads on first/second frequency and first/second communication protocol.

band selection logic wherein the WLAN device scans the first and second frequency bands transmitted according to the first and second communication protocols (i.e., a plurality of base band modules operating in accordance with different WLAN standards as described at paragraphs 0025-0027, 0071 and 0082).

at least one baseband processor that transmits outgoing data and receives ingoing data through the first and second baseband processor interfaces (i.e., baseband processor 40 of figure 5 or 6)

Monin, however, does not expressly teach or suggest band selection logic wherein the WLAN device scans a plurality of channels in the first and second frequency bands transmitted to selects a channel for a subsequent communication.

In a similar endeavor, Malhotra teaches or suggests wireless LAN with dynamic channel selection. Malhotra also teaches or suggests band selection logic wherein the WLAN device scans a plurality of channels in the first and second frequency bands transmitted to selects a channel for a subsequent communication (i.e., scanning and selecting a channel for operation as described at col. 3, line 43 - col. 4, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Malhotra to include band selection logic wherein the WLAN device scans a plurality of channels in the first and second frequency bands transmitted according to the first and second communication protocols to selects a channel for a subsequent communication.

The motivation/suggestion for doing so would have been to optimize the operation.

**Regarding claim 35**, Monin teaches or suggests a method for a Wireless Local Area Network (WLAN) device, comprising:

receiving, a first radio, digital data and transmitting RF signals in a first frequency band according to a first communication protocol and receiving RF signals in the first frequency band and producing corresponding digital data to a baseband processor (fig. 5 or fig. 6, baseband module 1 and radio module 1 is connected to each other);

receiving, in a second radio, the digital data transmitting RF signals in a second frequency band according to a second communication protocol and receiving RF signals in the first frequency band and producing corresponding digital data to the ~~single~~ baseband processor (fig. 5 or fig. 6, baseband module 2 and radio module 2 is connected to each other);

generating, from the baseband processor, the digital data for transmission from one of the first radio, the second radio or both wherein the baseband processor

produces the digital data through one of a first radio interface, a second radio interface or both for transmission (i.e., baseband processor 40 of figure 5 or 6).

Monin, however, does not expressly teach or suggest scanning a plurality of channels to determine which of a plurality of frequency bands and associated communication protocols should be used for a communication.

In a similar endeavor, Malhotra teaches or suggests wireless LAN with dynamic channel selection. Malhotra also teaches or suggests scanning a plurality of channels to determine which of a plurality of frequency bands and associated communication protocols should be used for a communication (i.e., scanning and selecting a channel for operation as described at col. 3, line 43 - col. 4, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Malhotra to include the step of scanning a plurality of channels to determine which of a plurality of frequency bands and associated communication protocols should be used for a communication.

The motivation/suggestion for doing so would have been to optimize the operation.

**Regarding claims 16 and 36**, Monin and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for determining a quality indicator, wherein the quality indicator for a selected

channel considers a channel power and interference power for the selected channel (paragraphs 0066, 0068).

**Regarding claims 18 and 37**, Monin and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for selecting a communication protocol for operation from a plurality of available communication protocols (paragraph 0071).

**Regarding claims 19 and 38**, Monin and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for selecting at least two frequency bands and communicating over at least one channel in each of the two frequency bands (paragraphs 0005, 0014 and 0071 describe using two different bands 2.4 GHz and 5 GHz).

**Regarding claim 20**, Monin and Malhotra teach or suggest all limitations recited within claims as described above. Monin teaches or suggests the first and second radio interfaces and first and second baseband processors wherein the first baseband processor communicates with the first baseband processor interface by way of the first radio interface and the second baseband processor communicates with the second baseband processor interface by way of the second radio interface (fig. 5 illustrates baseband module 1 is connected to radio module 1 and baseband module 2 is connected to radio module 2).

**Regarding claim 21**, Monin and Malhotra teach or suggest all limitations recited within claims as described above. Monin teaches or suggests including first and second radio interfaces wherein the first baseband processor communicates with the first baseband processor interface by way of the first radio interface and with the second baseband processor interface by way of the second radio interface (i.e., each baseband processor communicates with each of radio modules as illustrated in fig. 5 and 6).

5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of Malhotra et al. (hereinafter "Malhotra", US 7,110,374) as applied to claims 15 and 16 above, and further in view of Brandstetter (US 5,005,946).

**Regarding claim 17**, Monin and Malhotra teach or suggest all limitations recited within claims as described above, but do not expressly teach or suggest wherein the interference power includes in-channel interference and adjacent channel interference.

In a similar endeavor, Brandstetter teaches or suggests a method for multi-channel filtering system. Brandstetter also teaches or suggests wherein the interference power includes in-channel interference and adjacent channel interference (col. 8, line 67 – col. 9, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin and Malhotra's teachings and include the interference power includes in-channel interference and adjacent channel.

The motivation/suggestion for doing so would have been to optimize the operation.

6. Claims 22, 23, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of Agrawal et al. (hereinafter "Agrawal", US 2003/0108005) and further in view of Malhotra et al. (hereinafter "Malhotra", US 7,110,374).

**Regarding claim 22**, Monin teaches or suggests a Wireless Local Area Network (WLAN) device, comprising:

a first radio for receiving the digital data and for transmitting RF signals in a first frequency band and for receiving RF signals in the first frequency band and for producing corresponding digital data to the at least baseband processor interface (fig. 5 and fig. 6, radio module 1);

a second radio for receiving the digital data and for transmitting RF signals in a first frequency band and for receiving RF signals in the first frequency band and for producing corresponding digital data to the at least baseband processor interface (fig. 5 and fig. 6, radio module 2);

first and second baseband processor interfaces operably coupled to first and second radios that communicate according to first and second communication protocols (fig. 5, and fig. 6 illustrates the first baseband module 1 and baseband module 2 couple to the first and second radios, respectively. Hence, these baseband modules implicitly

include first and second baseband processor interfaces because each of the baseband module must be able to communicate with all other components). Note: The Examiner further notes that Monin specifically teaches or suggests the WLAN as described operating at 2.4 GHz frequency, but can also be implemented using other WLAN technologies including at different frequency bands, etc. Hence, this teaching reads on first communication protocol and second communication protocol;

wherein the first and second radio interfaces are operably coupled to communicate with the first and second baseband processor interfaces (fig. 5 and/or fig. 6 illustrate baseband module 1 and radio module 1 is connected to each other. Similarly, baseband module 2 is connected to radio module 2. Thus, they implicitly include these interfaces to make them to be compatible and be able to communicate with each other);

wherein the baseband processor generates digital data for transmission from one of the first radio, the second radio or both wherein the baseband processor produces the digital data through one of the first radio interface, the second radio interface or both for transmission (i.e., the baseband module is connected and communicated with the radio module);

wherein the baseband processor, the first and second radios, the first and second baseband processor interfaces, first and second radio interface are all a part of a single WLAN device (all the components as recited in this limitation is located within one device. That is, control unit 28. See fig. 5 and fig. 6). The Examiner further notes that Monin specifically teaches or suggests the WLAN as described operating at 2.4

GHz frequency. This means that the device is operating at one frequency which is the first frequency as recited in claim.

wherein the WLAN device scans the first and second frequency bands transmitted according to the first and second communication protocols (i.e., a plurality of base band modules operating in accordance with different WLAN standards as described at paragraphs 0025-0027 and 0082).

Monin, however, does not expressly teach or suggest:

a single baseband processor for receiving, processing and generating digital data; and

wherein the WLAN device scans a plurality of channels in the first and second frequency bands to select a channel for a subsequent communication.

In a similar endeavor, Agrawal teaches or suggests frequency hop collision avoidance in a multi-channel Bluetooth-enabled packet transmission system. Agrawal also teaches or suggests a single baseband processor (i.e., fig. 1, a single baseband controller 17) for receiving, processing and generating digital data (i.e., the single baseband controller 17 connects to the plurality of radio modules 14, 15, 16 that is capable of receiving, processing and generating digital data. See paragraph 0005 for the teachings of digital data).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin with the teachings of Agrawal to include a single baseband processor for receiving, processing and generating digital data, in order to enable the plural channels to be activated for simultaneous transmission.

Furthermore, Malhotra teaches or suggests wireless LAN with dynamic channel selection. Malhotra also teaches or suggests band selection logic wherein the WLAN device scans a plurality of channels in the first and second frequency bands to selects a channel for a subsequent communication (i.e., scanning and selecting a channel for operation as described at col. 3, line 43 - col. 4, line 4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin and Agrawal and include the band selection logic wherein the WLAN device scans a plurality of channels in the first and second frequency bands transmitted according to the first and second communication protocols to selects a channel for a subsequent communication.

The motivation/suggestion for doing so would have been to optimize the operation.

**Regarding claim 23**, Monin, Agrawal and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for determining a quality indicator, wherein the quality indicator for a selected channel considers a channel power and interference power for the selected channel (paragraphs 0066, 0068).

**Regarding claim 25**, Monin, Agrawal and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests

logic for selecting a communication protocol for operation from a plurality of available communication protocols (paragraph 0071).

**Regarding claim 26**, Monin, Agrawal and Malhotra teach or suggest all limitations recited within claims as described above. Monin also teaches or suggests logic for selecting at least two frequency bands and communicating over at least one channel in each of the two frequency bands (paragraphs 0005, 0014 and 0071 describe using two different bands 2.4 GHz and 5 GHz).

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Monin et al. (hereinafter "Monin", US 2002/0197984) in view of Agrawal et al. (hereinafter "Agrawal", US 2003/0108005) and Malhotra et al. (hereinafter "Malhotra", US 7,110,374) as applied to claims 15 and 16 above, and further in view of Brandstetter (US 5,005,946).

**Regarding claim 24**, Monin, Agrawal and Malhotra teach or suggest all limitations recited within claims as described above, but do not expressly teach or suggest wherein the interference power includes in-channel interference and adjacent channel interference.

In a similar endeavor, Brandstetter teaches or suggests a method for multi-channel filtering system. Brandstetter also teaches or suggests wherein the

interference power includes in-channel interference and adjacent channel interference (col. 8, line 67 – col. 9, line 12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Monin, Agrawal and Malhotra's teachings and include the interference power includes in-channel interference and adjacent channel.

The motivation/suggestion for doing so would have been to optimize the operation.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WAYNE CAI whose telephone number is (571)272-7798. The examiner can normally be reached on Monday-Thursday from 8:00 a.m. to 6:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard can be reached on (571) 272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wayne Cai/
Primary Examiner, Art Unit 2617